BY ORDER OF THE COMMANDER 442D FIGHTER WING

442D FIGHTER INSTRUCTION WING 91-208

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Safety

LOCKOUT/TAGOUT PROCEDURES PROGRAM

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This instruction implements Air Force Policy Directive (AFPD) 91-2, *Safety Programs,* Air Force Occupational Safety and Health Standard (AFOSHSTD) 91-501, *Air Force Consolidated Occupational Safety Standard.* This instruction establishes the minimum requirements for the lockout of energy isolating devices whenever maintenance or servicing is done on machines or equipment. It shall be used to ensure that the machine or equipment is stopped, isolated from all potentially hazardous energy sources and locked out before personnel perform any servicing or maintenance where the start-up of machinery, equipment or a release of stored energy could cause injury. Refer recommended changes and questions about this publication to the Office of Primary Responsibility (OPR) using the AF Form 847, Recommendation for Change of Publication; route AF Forms 847 from the field through the appropriate functional chain of command. Requests for waivers must be submitted through chain of command to the OPR listed above for consideration and approval. Ensure that all records created as a result of processes prescribed in this publication are maintained in accordance with (IAW) Air Force Manual (AFMAN) 33-363, Management of Records, and disposed of IAW Air Force Records Information Management System (AFRIMS) Records Disposition Schedule (RDS).

SUMMARY OF CHANGES

This document is substantially revised and must be completely reviewed. This revision changes the AFOSHSTD 91-501 reference to Air Force Consolidated Occupational Safety Standard and updates retraining requirements for authorized and affected personnel (**paragraph 4.1.5.1**)

1. Reference: AFPD 91-2, AFOSH 91-501, and Code of Federal Regulation (CFR) 1910.147.

2. Responsibilities: Responsibilities for implementing, monitoring, and enforcing the lockout/tagout procedures program are assigned as follows:

2.1. Unit Commanders:

2.1.1. Ensure this program is implemented fully within the unit.

2.1.2. Ensure the establishment of instructions and training pertaining to lockout/tagout procedures.

2.1.3. Provide equipment such as locks, tags, hasps, and adapters required under this instruction.

2.1.4. Ensure supervisors enforce all lockout/tagout procedures.

2.1.5. Evaluate the program annually to assure its continuing functioning and effectiveness.

2.1.6. Ensure supervisors perform training and self-inspections required by this instruction.

2.2. Flight Chiefs:

2.2.1. Evaluate facility work areas to determine machines and equipment requiring lockout/tagout during maintenance. Develop list of all machinery requiring lockout/tagout.

2.2.2. Ensure that all levels of supervision throughout the facility enforce all lockout/tagout procedures.

2.2.3. Certification of authorized lockout/tagout users.

2.2.4. Maintain current program materials, including roster of authorized lockout/tagout users and machine specific lockout/tagout procedures.

2.2.5. Advise all outside contractors (including 442 Civil Engineering Squadron (CES) and 509 CES) working within the facility of this program.

2.2.6. Ensure outside contractors (including 442 CES and 509 CES) understand this procedure and provide machine specific lockout/tagout procedures when applicable.

2.3. Supervisors:

2.3.1. Be completely knowledgeable of this procedure.

2.3.2. Coordinate with Flight Chief to designate authorized lockout/tagout users.

2.3.3. Develop written machine specific Lockout/Tagout guidelines and energy isolation information placards (Attachment 3) for each affected machine or equipment.

2.3.4. Post machine specific guidelines and information placards on or near each affected machine or piece of equipment.

2.3.5. Ensure personnel are trained as required by this instruction.

2.3.6. Enforce proper lockout/tagout procedure.

2.4. Authorized Lockout/Tagout users:

2.4.1. Have a thorough understanding of the lockout/tagout procedure.

2.4.2. Comply with all provisions of the procedure.

2.4.3. Advise supervisor immediately of any problems encountered when implementing this procedure.

2.5. Wing Safety Staff:

2.5.1. Perform annual inspections of the procedure and reviews of affected areas as required by this instruction.

2.5.2. Assist unit commander, flight chiefs, and supervisors in facilitating implementation of this instruction.

2.6. All affected personnel:

2.6.1. All affected personnel, upon observing a machine or piece of equipment, which is locked out to perform servicing, or maintenance, shall not attempt to start, energize, or use that machine or equipment.

3. Procedure.

3.1. Preparation for lockout/tagout:

3.1.1. Prior to initiating lockout/tagout, the authorized user will notify all affected employees and supervisors.

3.1.2. Before an authorized employee turns off a machine or piece of equipment, the following steps must be taken.

3.1.2.1. The authorized employee must review the machine-specific lockout/tagout guidelines for that machine or piece of equipment. The authorized employee must be knowledgeable of the types and magnitude of the energy, the hazards of the energy to be controlled, and the method or means by which it will be controlled.

3.1.2.2. The authorized employee must survey, using the machine-specific guidelines for that machine or equipment, to locate and identify all isolating devices to be certain which switch(es), valve(s), or other isolating devices apply to the equipment to be locked or tagged out.

3.2. Sequence of Lockout/Tagout:

3.2.1. If the machine or equipment is operating, shut it down using normal operating controls.

3.2.2. Operate the switch, valve, or other energy isolating device(s) so that the equipment or machine is isolated from its energy source(s).

3.2.3. Note**:** Stored energy such as that in springs, elevated machinery parts, rotating fly wheels, hydraulic systems and air, gas, steam, or water pressure must be relieved or restrained by methods such as repositioning, blocking, bleeding down, or other acceptable methods.

3.2.4. Lockout and tag the energy isolating device(s) with individual lock(s), tag(s), or other energy isolating tools (blocks, chains, etc.)

3.2.5. After ensuring that no personnel are exposed, operate the normal operating controls to ensure the equipment or machine will not operate.

3.2.6. Caution**:** Return operating controls to the neutral or "OFF" position after completion of this test. Failure to do so may result in unexpected machine operation following restoration of energy after service is complete.

3.3. Removing Lockout/Tagout and restoring machine or equipment to service

3.3.1. Ensure that all servicing or maintenance is complete.

3.3.2. Ensure that all tools, parts, mechanical locks (chocks, etc), and any like items are removed from the machine or equipment.

3.3.3. Ensure that all guards, shrouds, and safety devices are properly installed and operational.

3.3.4. Notify other personnel in the shop to safely withdraw from the machine area. Inspect to ensure the area is clear around the machine.

3.3.5. Remove lockout and tagout devices. This step must be accomplished by the authorized employee who applied the lockout and tagout devices.

3.3.6. Operate energy isolating devices to restore energy to the machine or equipment.

3.3.7. Perform final inspection to ensure that machine or equipment is operational and safe for normal operation.

3.3.8. Inform supervisor and affected personnel that the machine or equipment has been restored to normal operational status.

3.4. Group Lockout/Tagout procedure

3.4.1. When more than one worker will be required to perform servicing or maintenance on a machine or equipment that must be locked out, each person performing work must have a personal lock applied to the energy isolating devices.

3.4.2. When a switch, valve, or other energy-isolating device cannot accept multiple locks or tags, one of the following must be observed:

3.4.2.1. **(Option I)** A multiple lockout/tagout hasp must be used, or;

3.4.2.2. **(Option II)** A single lock can be used to secure each energy isolating device when he key to that lock is stored in a lockbox or cabinet secured by a lock applied by each authorized user.

3.4.3. In the event of a shift or personnel change when maintenance will continue by an authorized employee other than the one who applied the lockout/tagout, the original authorized employee is responsible for the orderly transfer of lockout/tagout devices. This transfer must be orderly and minimize exposure to other personnel. There should *never* be *any* period of time when there is no lockout/tagout device applied to energy isolating devices due to shift or personnel changes.

3.5. Irregular Lockout/Tagout removal:

3.5.1. Unless mission-essential circumstances warrant, only the authorized employee who applied the lockout/tagout device is authorized to remove it.

3.5.2. This section outlines the steps, which must be taken when, for whatever reason, it is impossible to contact the authorized employee who applied the device(s), or due to an emergency situation, it is necessary to remove the device(s). Convenience is not a valid reason for invoking the provisions of irregular lockout/tagout removal.

3.5.3. The only personnel authorized to remove lockout/tagout devices under circumstances outlined in the previous paragraph are the unit commander, flight chief, or supervisor of the authorized employee originally applying the lockout/tagout devices.

3.5.4. Lockout/tagout devices may be removed after every effort has been made to contact the original authorized employee by following the steps outlined in section 3.3, Removing Lockout/Tagout and restoring machine or equipment to service. Cut the lock off.

3.5.5. Inform original authorized employee prior to his/her next duty shift of the action taken and that the machine or equipment is no longer protected by lockout/tagout.

3.5.6. Forward completed checklist (Attachment 2) and the unserviceable lock to the safety office by the end of the next workday.

4. Lockout/Tagout Program Provisions.

4.1. Training:

4.1.1. The 442Fighter Wing Safety Office will provide classroom and hands-on training for flight chiefs whose shops contain machines or equipment falling under this instruction.

4.1.1.1. A letter of training will be sent to unit commanders documenting this training.

4.1.1.2. The flight chiefs will then be considered “Lockout/Tagout Trainers” for personnel in their areas.

4.1.2. Each authorized lockout/tagout employee shall receive training in the recognition of applicable hazardous energy sources, the type and magnitude of the energy available in the workplace, and the methods and means necessary for energy isolation and control.

4.1.3. All affected personnel shall be instructed in the purpose and use of the energy control procedure.

4.1.4. All other personnel whose work or operations are or may be in an area where energy control procedures may be utilized shall be instructed about the procedure, and be instructed that they are prohibited from restarting or re-energizing machines or equipment which are locked or tagged out.

4.1.5. All training conducted under this instruction will be documented on the AF Form 55 (Employee Safety and Health Record), and elsewhere as needed to ensure compliance with this instruction.

4.1.5.1. Retraining shall be provided for all authorized and affected personnel at least annually or when there is a change in their job assignments, machines, equipment process that present a new hazard, energy control procedures, periodic inspection of the program or procedure. Retraining shall also be provided when the unit

commander, flight chief, supervisor, or safety office determines there are inadequacies in personnel knowledge or use of the energy control procedure.

4.1.6. Lockout is the preferred method of energy isolation and control and provides the highest level of personnel protection. Tagouts may evoke a false sense of security and their meaning needs to be understood as part of the overall energy control program. If a tagout must be used as required by a particular situation, the following must be noted and included in authorized user and affected worker training.

4.1.6.1. Tags are warning devices and do not provide physical restraint as locks do.

4.1.6.2. When tags are attached to a machine or piece of equipment, the tag is not to be removed, bypassed, or ignored by personnel.

4.1.6.3. Tags must be legible and understandable.

4.1.6.4. Tags must be capable of withstanding the environment in which they are placed.

4.1.6.5. Tags must be securely attached to the energy isolating devices so that they do not become inadvertently or accidentally detached during use.

4.2. Lockout/Tagout device requirements and control:

4.2.1. The lock used for lockout must have only one key, and that key must be in the possession of the authorized employee applying the lockout device. Any and all exceptions to this provision must be approved by the 442d Fighter Wing (FW) Commander.

4.2.2. Lockout and tagout devices shall be singularly identified, shall be the only devices used for controlling energy, and shall not be used for any other purposes.

4.2.3. Locks and lockout devices used for energy control as outlined in this instruction shall be standardized within the wing. Safety will designate appropriate locks and tags for use under this instruction. The only authorized lock colors will be yellow and red.

4.2.4. Tags and tagout devices used for energy control as outlined in this instruction should be standardized in print and format.

4.2.5. Lockout and tagout devices used for energy control as outlined in this instruction must indicate the identity of the employee applying the device(s).

4.2.6. Tagout devices, including their means of attachment, shall be substantial enough to prevent inadvertent or accidental removal.

4.2.7. Tagout device attachment means shall be of a non-reusable type, attachable by hand, self-locking, and non-releasable with a minimum unlocking strength of at least 50 pounds.

4.3. Exception to Lockout/Tagout

4.3.1. This procedure does not apply to work on cord and plug connected equipment where the hazard of unexpected energization or start-up of the equipment is controlled by unplugging the equipment from the energy source and the plug then remains under the exclusive control of the person performing the servicing or maintenance. In this case, an

AF IMT 982, *Do Not Start Tag* will be attached to the plug while the machine or equipment is being serviced.

4.3.2. This procedure does not apply to maintenance of equipment permanently attached, affixed, or contained in aircraft or ground vehicles.

4.3.3. This procedure may apply in facility common areas, when unit personnel perform required tasks that expose them to unexpected energization or start-up of equipment or machines. Affected facility managers or supervisors must evaluate each circumstance under their control for applicability. Training requirements, group lockout/tagout provisions, and all steps in the lockout/tagout procedure must be strictly followed in these events.

4.3.4. For maintenance, servicing, security, condemnation, or identification of hazards falling outside the scope of lockout/tagout, the Air Force mishap prevention tags (AF IMTs 979 *Danger Tag*, AF IMT980, *Caution Tag*, AF IMT981 *Out of Order Tag*, and AF IMT982) will be employed.

4.4. Self-Inspection of Lockout/Tagout program

4.4.1. The safety office will conduct regular inspections of lockout/tagout procedures. This will be performed to ensure that the procedures outlined in this program are followed by authorized lockout/tagout personnel.

4.4.2. Within each flight, authorized lockout/tagout users will conduct annual reviews of other authorized lockout/tagout users, as determined by the flight chief.

4.4.2.1. The flight chief will ensure all authorized lockout/tagout users are included in the process.

4.4.2.2. Reviews will be conducted while a typical lockout/tagout procedure is actually performed by another authorized lockout/tagout employee.

4.4.2.3. The designated evaluator will observe the lockout/tagout procedure from initial shutdown of the machinery or equipment until all safeguards are removed and the machinery or equipment is restored to service.

4.4.2.4. The "Lockout/Tagout procedure checklist" (Attachment "1") will be completed by the evaluator. Any discrepancies or violations of the lockout/tagout program should be noted on the form. The flight chief will ensure that any problem areas are addressed and actions taken to prevent reoccurrence.

4.4.2.5. The completed form will be maintained by the flight chief for a period of two years.

4.4.3. Each flight chief will conduct an annual review of the lockout/tagout procedures program in that area. The annual review will include a review of the entire written lockout/tagout program to ensure the program is being adhered to. The unit commander, flight chief, and affected supervisor can make changes where deemed necessary. However, any proposed changes must comply with current AFOSH and Occupational Safety and Health Agency (OSHA) regulations in effect at the time of the review, and must be approved in writing by the 442FW Safety Office.

4.5. Definition of Terms Used In This Procedure

4.5.1. Affected Personnel-Personnel whose job responsibilities require operation or use of a machine or equipment on which servicing or maintenance may be performed under lockout/tagout or whose job requires work in an area in which such servicing or maintenance may be performed.

4.5.2. Authorized (Lockout/Tagout) employee. Personnel who actually employ lockout/tagout procedures to perform servicing or maintenance on machines or equipment.

ERIC S. OVERTURF, Brigadier General, USAFR
Commander

Attachment 1

GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION

References

AFOSH 91-501, *Air Force Consolidated Occupational Safety Standard*

AFPD 91-2, *Safety Programs*

CFR 1910.147, *Code of Federal Regulation*

Adopted Forms

AF Form 847, *Recommendation for Change of Publication*

AF IMT 979, *Danger Tag*

AF IMT 980, *Caution Tag*

AF IMT 981, *Out of Order Tag*

AF IMT 982, *Do Not Start Tag*

Abbreviations and Acronyms

AFMAN—Air Force Manual

AFOSHSTD—Air Force Occupational Safety and Health Standard

AFPD—Air Force Policy Directive

AFRIMS—Air Force Records Information Management System

CES—Civil Engineering Squadron

CFR—Code of Federal Regulation

FW—Fighter Wing

IAW—In Accordance With

OPR—Office of Primary Responsibility

OSHA—Occupational Safety and Health Agency

RDS—Records Disposition Schedule

Attachment 2

CHECKLIST

Figure A2.1. LOCKOUT/TAGOUT PROCEDURE CHECKLIST *Preparation.*

1. Notify all affected supervisors	
2. Notify all affected employees	
3. Ensure that you know and understand:	
(a) Type of magnitude of energy to be locked out	
(b) Location and type of isolating devices involved	
(c) The method of lock out being employed	
SEQUENCE OF LOCK OUT/TAG OUT	
1. All preparation steps completed	
2. Take equipment or machinery out of operation by means of normal shut down procedure	
3. Operate the energy isolating device(s)	
4. Ensure that there is no stored energy	
5. Lock and tag out isolating device(s) and relieve or restrain any stored energy	
6. List all energy isolating device(s) locked or tagged out, stored energy sources that are relieved or restrained	
7. Operate normal operating controls to ensure that the machine or equipment will not operate	
8. Ensure that all operating controls are returned to the neutral position	
RESTORING TO NORMAL PRODUCTION STATUS	
1. Ensure that all machine servicing and/or maintenance is complete	
2. Ensure that all tools, parts, mechanical locks and any like items are removed from machinery or equipment	
3. Ensure that all guards, shrouds and safety devices are properly installed and operational	

4. Notify other personnel in the area and ensure	
5. Remove lock out/tag out device(s) and mechanical restraint(s)	
6. Operate energy isolating devices to restore power to machinery or equipment	
7. Inspect area to ensure that machinery or equipment is operational and safe for normal production	
8. Inform affected Supervision(s) that machine is returned to normal production status	
9. Inform affected employee(s) that machine is returned to normal production status	

LOCK OUT/TAG OUT REMOVED BY:	**LOCK OUT/TAG OUT EVALUATOR**
_____	_____
Print Name	Print Name
_____	_____
Signature	Signature
_____	_____
Date	Date
Name of Equipment locked out	
Comments:	

Attachment 3

CHECKLIST

A3.1. A copy of this form must be completed each time a lock or tag is removed by other than the employee who initiated the lockout or tagout.

Figure A3.1. IRREGULAR REMOVAL OF LOCKOUT/TAGOUT PROCEDURE CHECKLIST PREPARATION.

1. Notify all affected supervisors	
2. Notify all affected employees	
3. Ensure that you know and understand:	
(a) Type of magnitude of energy to be locked out	
(b) Location and type of isolating devices involved	
© The method of lock out being employed	
REMOVAL OF LOCK OUT/TAG OUT DEVICE(S)	
1. Ensure that all machine servicing and/or maintenance are complete. If not complete, ensure that a tag out is placed on the machine or equipment to prevent starting	
2. Ensure that all tools, parts, mechanical locks and any like items are removed from machinery or equipment	
3. Ensure that all guards, shrouds and safety devices are properly installed and operational	
4. Notify other personnel in the area and ensure that all personnel are clear of any potential hazard	
5. Remove lock out/tag out device(s) and mechanical restraint (s)	
6. Inspect area to ensure that machinery or equipment is operational or that area is safe for employees after removal of energy isolating device(s)	
7. Operate energy isolating devices to restore power to machinery or equipment	
8. Inform affected Supervisor(s) that machine is returned to normal production status	
9. Inform affected employee(s) that machine is no longer tagged out	

LOCK OUT/TAG OUT REMOVED BY:	
_____	_____
Date	Print Name
	_____
	Signature
Notes:	

Attachment 4

CHECKLISTS

Figure A4.1. MACHINE DESCRIPTION.

Shop	Machine Description	Machine Identification	Contact For Assistance

Figure A4.2. ENERGY ISOLATION INFORMATION PLACARD.

Energy Sources		Isolating Devices			Control Devices			
Type	Amount	Type	Location	ID	Lock	Tag	Both	Note

Figure A4.3. Machine Specific Lockout/Tagout Procedure.

1. Notify all affected employees and supervisors of intent to apply lockout/tagout.
2. Review Energy Isolation Information Placard.
3. Survey machine using this procedure to locate and identify all isolating devices.
4. Shut machine down using normal operating controls:
5. Operate energy isolating devices to cut off energy to the machine.
6. Apply lockout and tagout devices as outlined in Energy Isolation Information Placard.
7. Ensure no personnel are exposed to machine or equipment test.
8. Activate normal operating controls to ensure equipment will not operate.